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**MUNICIPAL SEPARATE STORM  
SEWER SYSTEM (MS4)  
COMPLIANCE AUDIT**

**MUNICIPALITY OF MOCA,  
PUERTO RICO**

**FINAL REPORT**

**Audit Dates:**  
**August 12–13, 2013**

**Report Date:**  
**November 13, 2013**

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## Section 1.0 Introduction

On August 12–13, 2013, the U.S. Environmental Protection Agency (EPA), Caribbean Environmental Protection Division (CEPD), and an EPA contractor, PG Environmental, LLC (hereinafter, collectively, the EPA Audit Team) conducted an audit of the Municipal Separate Storm Sewer System (MS4) Program of the Municipality of Moca, Puerto Rico (Municipality or Moca). Discharges from the Municipality’s MS4 are regulated under *National Pollutant Discharge Elimination System (NPDES) General Permit for Discharges from Small Municipal Separate Storm Sewer Systems*, Permit No. PRR040000 (hereinafter, the Permit; see [Appendix A](#)), effective November 6, 2006. The Permit expired on November 6, 2011, but has been administratively extended. The Municipality submitted a notice of intent (NOI) for coverage under the Permit in September 2007 (NPDES No. PRR040025), and it has been developing its MS4 program since that time.

Part 4.1.1 of the Permit requires Moca to “develop, implement, and enforce a storm water management program designed to reduce the discharge of pollutants from your [Moca’s] small MS4.” Moca originally submitted a stormwater management program (SWMP) plan to EPA in December 2010, and EPA provided comments and identified deficiencies with Moca’s SWMP in January 2012. Municipality staff explained that Moca modified its SWMP to address the comments and deficiencies identified by EPA and to include “completion deadlines” for program implementation ranging from November 2011 to November 2015. Moca’s Stormwater Consultant explained that at the time of the audit Moca was operating under the *Municipality of Moca Storm Water Management Program (SWMP)*, dated June 2012 (hereinafter, Moca 2012 SWMP; see [Appendix B](#)).

According to the 2010 U.S. Census, the total population of Moca is about 40,109 people, and the Municipality encompasses approximately 51 square miles. Moca is located on the northwestern part of the Island of Puerto Rico. It is bordered by the municipality of San Sebastián to the east, the municipality of Aguada to the west, the municipality of Añasco to the south, and the municipalities of Aguadilla and Isable to the north. Moca has two distinct urbanized areas (i.e., Pueblo Ward and Aceitunas Ward) identified by the 2010 U.S. Census, which Moca considers to comprise its regulated MS4 for compliance with the Permit.

The Permit authorizes the Municipality to discharge stormwater runoff and certain non-stormwater discharges from the Municipality’s small MS4 to waters of the United States. The primary receiving water for the Municipality is the Rio Culebrinas.

The audit focused on three of the Minimum Control Measures (MCMs) described in Part 4 of the Permit:

- MCM 3 Illicit Discharge Detection and Elimination.
- MCM 4 Construction Site Storm Water Runoff Control.
- MCM 6 Pollution Prevention/Good Housekeeping for Municipal Operations.

The purpose of the audit was to obtain information that will assist EPA in assessing Moca's compliance with the requirements of the Permit and associated Moca 2012 SWMP, as well as the implementation status of the current MS4 Program. The audit schedule is presented as Appendix C.

The EPA Audit Team obtained information through interviews with representatives from the Municipality, along with a series of site visits, record reviews, and field verification activities. A copy of the sign-in sheet for the opening conference of the audit is presented as Appendix D. All referenced documentation used as supporting evidence is provided in Appendix E, the Exhibit Log; photo documentation is provided in Appendix F, the Photograph Log.

The primary representatives involved in the audit were the following:

<b>Municipality of Moca MS4 Program Compliance Audit: August 12–13, 2013</b>	
Municipality of Moca Representatives:	Jose Enrique Aviles Santiago, Mayor Hector L. Loperena, Director of Planning Felix Mendez, Planning and Development Engineer Cenilda Ramirez, Stormwater Consultant, Tetra Tech, Inc. Roy K. Perez Gonzalez, Public Relations and Tourism Director Nelson Gonzolez, Commissioner of Police Department Mario Hilerio, Director of Sanitation Evelyn Gonzalez, Sanitation Department and Recycling Program Administrative Assistant Alejandro Hernandez Rivera, Director of Public Works David Denis, Director of Parks and Recreation Adolfo Figueroa, Emergency Management and Disaster Administration Isabel Soto Bosquos, Director of Finances David A. Caban, Director of Human Resources
Puerto Rico Aqueduct and Sewer Authority (PRASA) Representative:	Ebdiel Escobar, Environmental Manager
EPA Representatives:	Sergio Bosques, Caribbean Environmental Protection Division
EPA Contractor Representatives:	Bobby Jacobsen, PG Environmental, LLC Max Kuker, PG Environmental, LLC Melba E. Ayala, Translator for PG Environmental, LLC

Dry weather conditions were experienced during the field activities conducted as a component of the audit on August 12, 2013. Precipitation occurred during a portion of the field activities conducted on August 13, 2013.

## **Section 2.0 Information Obtained Regarding Compliance with the Permit**

The EPA Audit Team conducted an evaluation of Moca's MS4 program to obtain information that will assist EPA in assessing the Municipality's compliance with the requirements of the Permit.

Prior to the audit, the EPA Audit Team formally requested that Moca have specific documentation available for review at the time of the audit. The EPA Audit Team provided Moca with a written list of requested records on July 2, 2013 (hereinafter, EPA Records Request; see Appendix E, Exhibit 1). Moca provided several documents to the EPA Audit Team before the audit, made multiple documents available during the audit, and also provided the EPA Audit Team with an inventory of those documents (hereinafter, Moca Response Inventory; see Appendix E, Exhibit 2). The EPA Records Request and Moca Response Inventory are referenced, as applicable, throughout this audit report.

During the audit, the EPA Audit Team obtained documentation and other supporting evidence regarding compliance with the Permit and Moca's implementation of the Moca 2012 SWMP. Pertinent information obtained during the evaluation is presented in this audit report as audit observations. The presentation of audit observations in this report does not constitute a formal compliance determination or notice of violation, but may identify areas of potential non-compliance. All referenced documentation used as supporting evidence is provided in Appendix E, the Exhibit Log; photo documentation is provided in Appendix F, the Photograph Log.

Table 1 provides a summary of the EPA Audit Team's overall audit observations. Descriptions and details regarding the audit observations, as well as supporting documentation, are provided in the applicable sections of this audit report.

**Table 1. Requirements of Moca's NPDES Permit (PRR040025) and Observations Identified by the EPA Audit Team**

Minimum Control Measures and Permit Requirements	Observations
<p><b>Illicit Discharge Detection and Elimination</b></p> <p>Part 4.2.3.1 of the Permit requires Moca to "develop, implement, and enforce a program to detect and eliminate illicit discharges (as defined in 40 CFR §122.26(b)(2)) into the permittee small MS4."</p> <p>See section 2.1.1 through section 2.1.5 of the audit report for specific permit references applicable to each numbered observation.</p>	<ol style="list-style-type: none"> <li>1. Moca had not developed a complete municipal separate storm sewer system map (Section 2.1.1).</li> <li>2. Moca had not developed a procedure or process to ensure its MS4 map is regularly updated (Section 2.1.2).</li> <li>3. Moca had not adopted an ordinance to prohibit non-stormwater discharges to the MS4 (Section 2.1.3).</li> <li>4. Moca had not conducted dry weather field screening for non-stormwater flows (Section 2.1.4).</li> <li>5. Moca had provided training to municipal staff regarding illicit discharge detection and stormwater awareness (Section 2.1.5).</li> </ol> <p>See the referenced sections of the audit report for further discussion of these observations.</p>
<p><b>Construction Site Storm Water Runoff Control</b></p> <p>Part 4.2.4.1 of the Permit requires Moca to "develop, implement, and enforce a program to reduce pollutants in any storm water runoff to their small MS4 from construction activities that result in land disturbance greater than or equal to one acre."</p> <p>See section 2.2.1 through section 2.2.5 of the audit report for specific permit references applicable to each numbered observation.</p>	<ol style="list-style-type: none"> <li>1. Moca had not developed or adopted an ordinance to require erosion and sediment controls for construction sites (Section 2.2.1).</li> <li>2. Moca had not developed or implemented procedures for conducting and documenting construction site plan review (Section 2.2.2).</li> <li>3. Moca had not developed or implemented procedures for conducting construction site inspections (Section 2.2.3).</li> <li>4. The EPA Audit Team noted deficiencies at construction sites visited during the audit (Section 2.2.4).</li> <li>5. The EPA Audit Team observed issues related to public construction projects maintaining coverage under the OGPe Consolidated Permit and EPA Construction General Permit prior to the start of construction (Section 2.2.5).</li> </ol> <p>See the referenced sections of the audit report for further discussion of these observations.</p>
<p><b>Pollution Prevention and Good Housekeeping for Municipal Operations</b></p> <p>Part 4.2.6.1.1 of the Permit requires Moca to "develop and implement an operation and maintenance program that includes a training component and has an ultimate goal of preventing or reducing pollutant runoff from municipal operations."</p> <p>See section 2.3.1 through section 2.3.4 of the audit report for specific permit references applicable to each numbered observation.</p>	<ol style="list-style-type: none"> <li>1. The EPA Audit Team noted several deficiencies at municipal facilities during site visits conducted as a component of the audit (Section 2.3.1).</li> <li>2. Moca had conducted stormwater awareness training for municipal employees (Section 2.3.2).</li> <li>3. Moca had assessed its municipal facilities to determine the potential for stormwater pollution and to identify facilities for annual inspection (Section 2.3.3).</li> <li>4. Moca had not performed annual inspections at high-priority municipal facilities during 2013 as specified in its SWMP (Section 2.3.4).</li> </ol> <p>See the referenced sections of the audit report for further discussion of these observations.</p>

## ***Section 2.1 Illicit Discharge Detection and Elimination***

Part 4.2.3.1 of the Permit requires Moca to “develop, implement, and enforce a program to detect and eliminate illicit discharges (as defined in 40 CFR §122.26(b)(2)) into the permittee small MS4.”

### **2.1.1. Moca had not developed a complete municipal separate storm sewer system map.**

Part 4.2.3.1.2 of the Permit requires that Moca “[d]evelop, if not already completed, a storm sewer system map, showing the location of all outfalls and the names and location of all waters of the United States that receive discharges from those outfalls.”

Page 30 of the Moca 2012 SWMP notes, “[t]he Municipality currently does not have a storm sewer infrastructure map.” The SWMP states that the map will be completed and submitted by October 2013. The SWMP lists the specific storm sewer system components and attributes to be mapped, including locations of inlets, outfalls, and receiving waterbodies, as well as the flow direction of each road and underground pipe.

As noted above, Moca has two distinct urbanized areas (i.e., Pueblo Ward and Aceitunas Ward) which Moca considers to comprise its regulated MS4; therefore, Moca has focused its mapping efforts in these areas. Moca’s Stormwater Consultant explained that staff from Tetra Tech, Inc. (consultant to Moca) had completed mapping the storm sewer infrastructure in the Pueblo Ward (see [Appendix E, Exhibit 3](#)). The mapping effort identified a total of 453 storm drain inlets, 54 outfalls, and 8.21 miles of storm sewer pipes (see [Appendix E, Exhibit 4](#)). The map provided by the Municipality depicted storm sewer locations, types and locations of inlets, direction of water flow, some discharge locations, and the location of rivers and streams. The map did not clearly display the outfalls from all segments of sewer pipe and there were some areas on the map where it appeared there would be an outfall at the end of a length of pipe, but it was not identified on the map. In addition, the map does not display the names of receiving waters.

Municipality staff explained that they plan on starting mapping activities in the Aceitunas Ward during fall 2013 but probably would not be completely finished with the activities by October 2013 (as noted in the Moca 2012 SWMP). Moca’s Director of Planning explained that he and Moca’s Planning and Development Engineer have taken a course on geographic information system (GIS) mapping and the Municipality has purchased software and equipment to enable Moca to conduct its own mapping efforts. Municipality staff explained that Moca does not have as-built plans or construction drawings for the existing storm sewer system and the Municipality must generate its mapping information by gathering information in the field.

During field activities conducted as a component of the audit, the EPA Audit Team noted several discrepancies between what was depicted on Moca’s MS4 map of the Pueblo Ward and what was observed in the field. The mapping discrepancies are described below and illustrated in an annotated map (see [Appendix E, Exhibit 5](#)).

1. At the Moca Recycling Facility, the Audit Team noted that the map displayed one storm drain inlet along the curb and gutter flow line and no discharge point near the facility entrance on Calle Ernesto Caban Sosa; however, two storm drain inlets were present in the field (see Appendix F, Photographs 1 and 2) and there was an adjacent discharge location to the nearby intermittent stream. Municipality staff explained that the drainage infrastructure in this area had been recently modified, after creation of the storm sewer map. This issue is further discussed in section 2.1.2.
2. In addition, the EPA Audit Team observed a storm drain inlet within the Moca Recycling Facility boundary, approximately 75 feet to the southeast of the facility entrance, that discharges to the underground stream (see Appendix F, Photographs 3 and 4). This inlet was not depicted on the map, and Municipality staff stated it was not newly installed.
3. Numerous issues were identified with the map attributes and accuracy during field verification activities near the intersection of Calle Concepcion Vera Ayala and Calle Jose Celso Barbosa.
  - a. The map indicates that several storm sewer segments terminate near the banks of the stream, but no outfalls are noted on the map. Upon investigation, the EPA Audit Team observed outfalls from those storm sewer segments.
  - b. A curb inlet near the intersection is not depicted as being attached to a storm sewer. The EPA Audit Team identified a short storm sewer segment from this curb inlet to an outfall to the stream.
  - c. A storm sewer segment appears to be in the incorrect location directly to the southwest of the intersection of Calle Jose Celso Barbosa and Calle Concepcion Vera Ayala.
  - d. Three storm sewer grate inlets in the parking area near the baseball field are not depicted as being attached to a storm sewer. The EPA Audit Team identified a short storm sewer segment from these grate inlets to an outfall to the stream.
4. Several instances were identified on the map where inlets and storm sewers were noted and appear to discharge to waterbodies, but no discharge points are indicated on the map.

**2.1.2. Moca had not developed a procedure or process to ensure its MS4 map is regularly updated.**

Part 4.2.3.2.1 of the Permit requires that Moca document “[h]ow the permittee will develop a storm sewer map showing the location of all outfalls and the names and location of all receiving waters” and “describe how the map will be regularly updated.”

Pages 30 and 31 of the Moca 2012 SWMP describe how Moca’s MS4 map would be developed but does not discuss how the map will be regularly updated. Furthermore, during onsite discussions, Municipality staff explained that Moca had not developed a procedure or process to ensure its MS4 map is maintained and up to date.



During field activities, the EPA Audit Team observed a location where the storm drainage system had been modified but the map had not been updated to reflect the change. Specifically, Moca had modified the roadway drainage (i.e., added storm drain inlets and an outfall) on Calle Ernos Caban Sosa in front of the Moca Recycling Facility subsequent to the development of the storm sewer system map (see [Appendix F, Photographs 1 and 2](#)). A review of Moca's MS4 map of the Pueblo Ward revealed that the map had not been updated to reflect the recent changes to the drainage infrastructure. Municipality staff confirmed that the changes to the map had not been made and that procedures were not in place to update the map after changes are made to Moca's storm sewer infrastructure.

### **2.1.3. Moca had not adopted an ordinance to prohibit non-stormwater discharges to the MS4.**

Part 4.2.3.1.3 of the Permit requires Moca to “effectively prohibit, through ordinance, or other regulatory mechanism, non-storm water discharges into the permittee storm sewer system and implement appropriate enforcement procedures.”

In addition, page 29 of the Moca 2012 SWMP identifies that Moca will develop and approve an ordinance which prohibits all non-stormwater discharges, as defined by the Permit. The SWMP identifies that the ordinance would be developed by July 2013. Though the SWMP identifies the “approval of an IDDE ordinance” as a measureable goal for the program, it does not specify a completion deadline for approving or adopting the ordinance.

At the time of the audit, Moca, in collaboration with its consultant, had developed a draft ordinance that addresses illicit discharge detection and elimination requirements, but it had not yet been approved or adopted (see [Appendix E, Exhibit 6](#)). Moca's Director of Planning explained the Municipality had gathered stormwater ordinances from other municipalities in Puerto Rico as examples. The Municipality had developed a draft ordinance based on those examples. Section 1 of the draft ordinance states the objectives of the ordinance are to prohibit illicit connections and discharges to the MS4; to establish legal authority, tracking, and monitoring procedures to ensure compliance with the ordinance; and to implement an effective educational program.

Municipality staff explained the draft ordinance will be reviewed and updated to ensure it includes appropriate language regarding illicit discharges and construction program requirements. When completely developed and adopted, the ordinance will constitute an overall “Stormwater Ordinance” for the Municipality. Staff explained that they anticipate completing the draft Stormwater Ordinance (including IDDE and construction components) by the end of August 2013 and sending it to the Municipality Legislature for approval, public review, and adoption within three to six months after completion. Municipality staff stated that the ordinance will apply to Moca's entire jurisdiction, not just those areas considered to be the regulated MS4.

#### **2.1.4. Moca had not conducted dry weather field screening for non-stormwater flows.**

Part 4.2.3.1.1 of the Permit requires Moca to “develop, implement and enforce a program to detect and eliminate illicit discharges in the permittee small MS4,” and Part 4.2.3.2.4 of the Permit requires that Moca’s plan to detect and address illicit discharges include “dry weather field screening for non-storm water flows and field tests of selected chemical parameters as indicators of discharge sources.”

Pursuant to these requirements, page 28 of the Moca 2012 SWMP states Moca will develop an “Illicit Discharge Detection and Elimination (IDDE) Plan” (hereinafter, IDDE Plan). The IDDE Plan will include procedures for selecting areas to be inspected during dry weather, a dry weather field screening protocol, a standard operating procedure (SOP) for investigating suspected illicit discharges, and a method for tracking investigation activities. Page 33 of the SWMP identifies the IDDE Plan will be developed by November 2013 and implemented by July 2015. The SWMP identifies that dry weather inspections of outfalls in the downtown area will be completed by July 2015, during Permit Year 2014–2015 (i.e., November 7, 2014 to November 6, 2015).

During the audit, Moca’s Stormwater Consultant explained that Moca had not conducted or documented MS4 outfall screening activities, but plans to initiate outfall screening in the Pueblo Ward in Permit Year 2014–2015. Moca intends to use staff members from Moca’s Emergency Management Department and Police Department to conduct outfall screening activities, once the staff has been properly trained. The EPA Audit Team recommended that the Municipality establish and maintain an inventory of reported illicit discharges and corresponding responses and corrective actions.

The EPA Audit Team formally requested “[r]ecords of priority list outfall inspections/dry weather field screening and monitoring (most recent Reporting Year),” but Moca did not provide the requested records (see Appendix E, Exhibit 2, Item No. 11). As stated above, Moca’s Stormwater Consultant explained that the Municipality had not conducted or documented MS4 outfall screening activities.

The Moca Stormwater Consultant also stated that she had developed a draft IDDE Plan and procedure and presented it to Moca in July 2013. The document is titled *Detección y Eliminación de Descargas Ilícitas al Sistema Pluvial Municipal Mejores Prácticas de Manejo (BMPs) Procedimiento Estándar de Operación (SOP)* (*Detection and Elimination of Illicit Discharges for the MS4, Best Management Practices (BMPs), Standard Operating Procedure (SOP)*) (see Appendix E, Exhibit 7). The plan includes procedures for conducting dry weather outfall screening, documenting observations, performing enforcement actions, and notifying other agencies. The draft will be shared with various municipal departments to ensure the procedures would be achievable for Moca. At the time of the audit, Municipality staff had not received training on the IDDE Plan.

In addition, page 29 of the Moca 2012 SWMP notes that an enforcement response plan (ERP) will be developed to aid in consistent and effective enforcement of illicit

discharge-related regulations. The ERP will include a description of available enforcement actions and timeframes for escalation. It should be noted that during the audit, neither Municipality staff nor Moca's Stormwater Consultant mentioned the development of a specific ERP and the SWMP does not identify a completion deadline for developing and implementing this tool.

**2.1.5. Moca had provided training to municipal staff regarding illicit discharge detection and stormwater awareness.**

Part 4.2.3.1.5 of the Permit requires Moca to "inform public employees, businesses, and the general public of hazards associated with illegal discharges and improper disposal of waste."

Pursuant to this requirement, page 32 of the Moca 2012 SWMP states Moca will "provide staff as well as residents training regarding the detection and prevention of illicit discharges." Page 33 of the Moca 2012 SWMP indicates that training regarding illicit discharges will be provided one time per year, starting in 2012 and continuing through November 2015.

The Municipality Director of Planning explained that through its outreach efforts, Moca generally teaches the public that they should not pollute waterways or storm drain inlets with sediment or other pollutants because they ultimately discharge to the Rio Culebrinas, a drinking water source for the Municipality.

Moca's Stormwater Consultant explained she has provided two primary trainings for the Municipality: (1) training in June 2012 for all of Moca's department directors (about 16 staff) regarding the updated SWMP, illicit discharge detection, and stormwater awareness, and (2) training in October 2012 for Public Works Department staff regarding stormwater awareness and best management practices (BMPs). Moca's *SWMP Implementation Annual Report*, dated November 2012 (hereinafter, Annual Report) also notes that IDDE training was given to municipal employees in October 2012. Moca maintains copies of training sign-in sheets and presentation materials as documentation of the training events.

## ***Section 2.2 Construction Site Storm Water Runoff Control***

Part 4.2.4.1 of the Permit requires Moca to “develop, implement, and enforce a program to reduce pollutants in any storm water runoff to their small MS4 from construction activities that result in land disturbance greater than or equal to one acre.”

It should be noted that Moca, like most other municipalities in Puerto Rico, has not been granted the authority (through a delegation agreement) to enforce the regulations of the Puerto Rico Environmental Quality Board (EQB), which include erosion and sediment control regulations. Regardless of this fact, the Municipality is required to meet the requirements in Part 4.2.4 of the Permit for construction site stormwater runoff control.

### **2.2.1. Moca had not developed or adopted an ordinance to require erosion and sediment controls for construction sites.**

Part 4.2.4.1.1 of the Permit requires that Moca develop and implement “[a]n ordinance or other regulatory mechanism to require erosion and sediment controls, as well as sanctions to ensure compliance, to the extent allowable under State or local law.”

Page 37 of the Moca 2012 SWMP identifies that the “erosion and sediment control ordinance” would be developed by July 2013 but does not specify a date for adoption. As noted above, Moca has not been granted the authority to enforce the regulations of EQB, including erosion and sediment control requirements; however, Moca’s Stormwater Consultant and Municipality staff explained that they were in the process of developing an overall Stormwater Ordinance which would include construction-related requirements. Municipality staff explained they anticipated completing the draft Stormwater Ordinance (including IDDE and construction components) by the end of August 2013 and anticipated the ordinance being approved and adopted within three to six months of completion.

The EPA Audit Team formally requested “[a]ll construction related ordinances and regulatory mechanisms pertaining to erosion, sediment, and waste control,” but Moca did not provide the requested information (see Appendix E, Exhibit 2, Item No. 23). Moca’s Stormwater Consultant explained that she had provided the Municipality with draft language for construction requirements to be considered for incorporation into Moca’s draft Stormwater Ordinance, but it had not yet been reviewed or added to the draft ordinance. The EPA Audit Team did not obtain a copy of the draft language regarding construction requirements for the Stormwater Ordinance.

Municipality staff explained the Stormwater Ordinance will be beneficial to Moca’s construction oversight program because it will incorporate a prohibition for illicit discharges to the MS4, establish fines for non-compliance, and grant access for inspection of private construction projects.

Moca’s Stormwater Consultant further explained that the Municipality is planning on modifying its contract process for publicly-funded construction projects to explicitly require compliance with the Erosion and Sediment Control Plan (Plan CES) requirements

of Puerto Rico's Permits Management Office (Oficina de Gerencia de Permisos; OGPe) Consolidated Permit and EPA's Construction General Permit.

During the audit, Municipality staff and the EPA Audit Team discussed the potential for requiring construction contractors to have a construction stormwater training certificate from Moca in order to conduct work within the Municipality.

**2.2.2. Moca had not developed or implemented procedures for conducting and documenting construction site plan review.**

Part 4.2.4.1.4 of the Permit requires Moca to develop and implement "procedures for [construction] site plan review which incorporate consideration of potential water quality impacts."

The EPA Audit Team formally requested "[p]rocedures for site plan review considering potential water quality impacts" (see Appendix E, Exhibit 2, Item No. 25), but Moca did not provide the requested information. Municipality staff and Moca's Stormwater Consultant explained that procedures for site plan review had not been developed or implemented.

Moca's Director of Planning explained that, at the time of the audit, Moca did not have the regulatory ability to require plans to be submitted to the Municipality and reviewed prior to construction. He added that a private developer may submit construction plans to Moca for review and the Municipality can provide comments and recommendations; however, the developer is not required to address Moca's comments or recommendations in order to start construction.

Page 35 of the Moca 2012 SWMP describes that through its ordinance (not yet adopted at the time of the audit) the Municipality will require developers to submit a copy of their Plan CES (developed for the OGPe Consolidated Permit) and stormwater pollution prevention plan (SWPPP; developed for the EPA Construction General Permit) for review and approval by the Municipality. In addition, the Moca 2012 SWMP states that Moca will develop an "Erosion and Sediment Control Plan Revision Standard Operating Procedure" to describe plan review procedures by September 2013.

**2.2.3. Moca had not developed or implemented procedures for conducting construction site inspections.**

Part 4.2.4.1.6 of the Permit requires Moca to develop and implement "procedures for [construction site] inspection and enforcement of control measures."

The EPA Audit Team formally requested "procedures for site inspection and enforcement of control measures" (see Appendix E, Exhibit 2, Item No. 28), but Moca did not provide the requested information. Municipality staff and Moca's Stormwater Consultant explained that procedures for conducting construction site inspections had not been developed or implemented, and that the procedures would be developed in concert with the Municipality's Stormwater Ordinance. Municipality staff explained that it had not conducted or documented construction site inspections for stormwater purposes as a

component of the MS4 program. The staff further explained that once the Stormwater Ordinance is adopted, a contractor or staff from Moca's Planning Department will be provided training to perform construction site inspections on behalf of the Municipality.

Page 35 of the Moca 2012 SWMP states that Moca will develop a "Construction Projects Inspection Protocol and Notification of Violation to PREQB Process Standard Operating Procedure [SOP]." The SOP will describe inspection procedures and include an inspection form. The SWMP states that the SOP will be developed by September 2013, but inspections of public and private construction sites will not begin until Permit Year 2014–2015.

The SWMP identifies that each construction project will be inspected at least three times: (1) once after initial grading has begun, (2) once within 48 hours of a rainfall event, and (3) once when the project is complete. The inspection frequency may be increased based on a priority ranking.

The SWMP also notes that Moca will develop an ERP to enforce stormwater requirements for construction projects. The ERP will include a description of available enforcement actions and timeframes for escalation. The SWMP identifies that the ERP will be developed by November 2013.

#### **2.2.4 The EPA Audit Team noted deficiencies at construction sites visited during the audit.**

On August 13, 2013, the EPA Audit Team visited two public construction sites within the Municipality as a component of the audit: (1) Public Works Facility Construction Project, and (2) Moca Cemetery Construction Project. The primary purpose of the site visits was to document site conditions and to assess Moca's oversight activities for construction sites. Because of their relevance to Moca's obligations under its MS4 permit, summary observations pertaining to the construction projects are presented below. All referenced photographs are contained in [Appendix F](#), Photograph Log.

##### ***Moca Public Works Facility Construction Project – Located about 0.25 mile Southeast of the Intersection of Highway 111 and Calle Jose Celso Barbosa***

Moca staff explained that the Moca Public Works Construction Project was an active project, though no construction activity was taking place at the time of the site visit. The construction project had coverage under the OGPc Consolidated Permit (No. 2011-400284-PCO-35191), though it appeared to have been obtained after construction activities commenced. Discussions with Moca representatives and project representatives indicated that a Notice of Intent (NOI) for coverage under the EPA Construction General Permit was submitted to EPA August 9, 2013, approximately 20 months after construction activities commenced. Issues regarding permit coverage are further discussed in section 2.2.5. The project engineer explained that construction activities for the project started in December 2011 or January 2012. He stated that the project was in the fourth of five phases at the time of the site visit.

During the site visit, the EPA Audit Team observed the following with regard to construction site stormwater runoff control and stormwater drainage:

1. Silt fence was not present around the perimeter of site as was depicted in the project's erosion and sediment control plan (see Appendix E, Exhibit 8 and Appendix F, Photographs 5 and 6). Site representatives explained that it had been removed once the project reached a certain stage of construction, but this change had not been reflected in the project's erosion and sediment control plan or site map.
2. Hay bale BMPs did not fully surround storm drain inlets along the western perimeter of the project as was depicted in the project's erosion and sediment control plan (see Appendix F, Photographs 7 and 8).
3. Silt fence implemented near the construction entrance in along the western perimeter of the project were not properly installed. Specifically, they were not entrenched into the ground (see Appendix F, Photograph 8).
4. Concrete waste was present on the ground surface in various areas of the construction site (see Appendix F, Photographs 9, 10, and 11).

***Moca Cemetery Construction Project – Located along Calle Jesus Ramos about 0.25 mile Southwest of the Intersection of Calle Jesus Ramos and Calle Jose Celso Barbosa***

The Moca Cemetery Construction Project was active at the time of the audit and appeared to disturb an area greater than one acre. The construction project had coverage under the OGPc Consolidated Permit (No. 2012-05326-PCO-35220). The construction project did not have EPA Construction General Permit Coverage at the time of the audit. According to site representatives, construction started in January 2013, about seven months prior to the audit. This issue is further discussed in section 2.2.5. The construction project consisted of installing new fences and sidewalks, constructing a new ceremonial building, and expanding the area of the cemetery to the southwest. Site representatives estimated that construction would be complete in December 2013 or January 2014.

During the site visit, the EPA Audit Team observed the following with regard to construction site stormwater runoff control and stormwater drainage:

1. Accumulated sediment was observed in the curb and gutter and in the roadway along Calle Jesus Ramos adjacent to the construction site entrance (see Appendix F, Photographs 12 through 15).
2. A construction site worker was hosing down the street along Calle Jesus Ramos adjacent to the construction site entrance (see Appendix F, Photograph 13).
3. Hay bales had been placed adjacent to storm drain inlets in various locations throughout the construction site as inlet protection BMPs. The hay bales were depicted on the construction project's erosion and sediment control plan (see Appendix E, Exhibit 9); however, the hay bales did not appear to be effective for preventing sediment from entering the storm drain inlets. Specifically, the hay bales were not entrenched into the ground or otherwise secured, and in multiple locations the hay bale did not fully surround or cover the storm drain inlets (see Appendix F, Photographs 16 through 21).

4. Silt fence BMPs were not properly installed in multiple locations at the construction site. Specifically, silt fence installed in a stockpile area in the southwestern portion of the site was not entrenched into the ground (see Appendix F, Photographs 22 and 23). In addition, silt fence installed around the soil stockpile in the southwestern corner of the site was not entrenched into the ground; there were gaps between adjacent lengths of silt fence; and portions of the silt fence had collapsed (see Appendix F, Photographs 24 through 28).
5. Perimeter control BMPs had not been installed at the end of the disturbed area in the southwestern corner of the site upgradient of a drainage channel and adjacent to a wetland area (see Appendix F, Photographs 29, 30, and 31).
6. Adequate sediment and erosion control BMPs were not installed or maintained along the northwestern perimeter of the site. Specifically, silt fence installed along the perimeter had collapsed in multiple locations (see Appendix F, Photographs 32 and 33). In addition, perimeter control BMPs were not present along the edge of portions of the disturbed area (see Appendix F, Photographs 34 through 38). Sediment was present in the adjacent drainage channel (see Appendix F, Photographs 38 and 39).

**2.2.5. The EPA Audit Team observed issues related to public construction projects maintaining coverage under the OGPe Consolidated Permit and EPA Construction General Permit prior to the start of construction.**

As noted in the previous finding, the EPA Audit Team visited two public construction sites as a component of the audit and observed issues with the projects maintaining stormwater permit coverage prior to the start of construction. The observations regarding these issues are described below in the sections for each of the construction projects.

***Moca Public Works Facility Construction Project***

1. According to site representatives construction activities commenced in December 2011 or January 2012.
2. The construction contractor (William Contractor, Inc.) obtained coverage under the OGPe Consolidated Permit on June 11, 2013, approximately 18 months after construction activities commenced (see Appendix E, Exhibit 10).
3. A Notice of Intent (NOI) for coverage under the Construction General Permit was submitted to EPA August 9, 2013, approximately 20 months after construction activities commenced.
4. Municipality staff and Moca's contracted construction inspection firm, Global Engineering Consultants, explained that over the past year they had requested information on numerous occasions from the contractor, William Contractor, Inc., to demonstrate compliance with OGPe's Consolidated Permit Plan CES requirements and the EPA Construction General Permit. However, the contractor had not provided the information upon request. For example, monthly reports from Global Engineering Consultants dated September 3, 2012 and October 8, 2012 explain that the contractor had not provided evidence of compliance with the Plan CES and NPDES permit requirements (see Appendix E, Exhibit 11).



5. At the time of the site visit, no inspections had been conducted at the construction site for compliance with EPA's Construction General Permit. One monthly inspection had been conducted for OGPe's Consolidated Permit Plan CES requirements.

***Moca Cemetery Construction Project***

1. According to site representatives construction activities commenced in January 2013.
2. The project was active at the time of the audit and appeared to disturb an area greater than one acre.
3. The construction project had coverage under the OGPe Consolidated Permit (No. 2012-05326-PCO-35220).
4. The construction project did not have EPA Construction General Permit Coverage at the time of the EPA Audit Team's site visit on August 13, 2013.
5. Subsequent to the audit, Moca's Stormwater Consultant informed the EPA Audit Team that Moca's Planning Director requested the contractor to obtain EPA Construction General Permit Coverage immediately. According to an email to the EPA Audit Team from Moca's Stormwater Consultant, "The Municipality specified to the contractor that the Municipality will not provide payment for their invoices until they submit the evidence of NOI submittal." In response, an NOI for permit coverage was submitted on August 13, 2013 (see Appendix E, Exhibit 12). The NOI identifies that the total disturbed area for the project is 12 acres.

## ***Section 2.3 Pollution Prevention and Good Housekeeping for Municipal Operations***

Part 4.2.6.1.1 of the Permit requires Moca to “develop and implement an operation and maintenance program that includes a training component and has an ultimate goal of preventing or reducing pollutant runoff from municipal operations.”

### **2.3.1. The EPA Audit Team noted several deficiencies at municipal facilities during site visits conducted as a component of the audit.**

On August 12, 2013, the EPA Audit Team conducted site visits at two municipally owned facilities. The purpose of the site visits was to document site conditions and to assess Moca’s oversight activities for municipal operations and maintenance. The EPA Audit Team visited Moca’s Public Works Facility and Recycling Facility. Because of their relevance to Moca’s obligations under its MS4 permit, summary observations pertaining to the site visits are presented below. All referenced photographs are contained in Appendix F, Photograph Log.

#### ***Moca Public Works Facility – Southwest of the intersection of Carretera Cuesta Vieja (PR-460) and Llano Jimenez; Cuesta Vieja Ward; Moca, Puerto Rico***

The Moca Public Works Facility, owned and operated by Moca, is used for various public works activities associated with the Moca MS4, including the following: (1) vehicle and equipment storage, (2) routine vehicle and equipment maintenance (e.g., brake maintenance, fluid changes), (3) material storage, and (4) storage of decommissioned vehicles.

A new public works facility was under construction at the time of the audit and Municipality staff explained they anticipate moving to the new facility in the beginning of calendar year 2014.

Moca and its consultant conducted an initial inspection for pollution prevention and good housekeeping at the Public Works Facility on August 1, 2012. The inspection report from that activity is included as Appendix E, Exhibit 13. The inspection report identifies numerous site deficiencies and is referenced, as applicable, in the site observations below.

Moca’s Stormwater Consultant explained that she had developed a Facility Pollution Prevention Plan (FPPP) for the Moca Public Works Facility (see Appendix E, Exhibit 14). A copy of the FPPP was maintained onsite along with a copy of the facility inspection report for the inspection conducted by Moca and its consultant on August 1, 2012. The FPPP is referenced, as applicable, in the site observations below.

The EPA Audit Team observed the following with regard to pollution prevention and good housekeeping at the Moca Public Works Facility:

1. Staining underneath and adjacent to vehicles was observed in multiple locations throughout the facility (see Appendix F, Photographs 40 through 48). Page 8 of

the facility FPPP identifies that drip pans should be used under leaking vehicles to minimize the discharge of pollutants from the storage of decommissioned vehicles.

- a. Most of the staining appeared to be associated with decommissioned vehicles. Municipality staff explained that they increased the pace of disposing of decommissioned vehicles in response to the facility inspection conducted by Moca's consultant on August 1, 2012.
2. BMPs for erosion or sediment control had not been implemented for a disturbed slope along the intermittent stream channel on the eastern edge of the facility (see Appendix F, Photographs 49, 50, and 51).
3. A flow pathway with actively flowing water, flowing west to east to the intermittent stream channel along the eastern edge of the facility, was observed in the decommissioned vehicle area and unstabilized parking area (see Appendix F, Photographs 52 through 55). Municipality staff explained that a PRASA water main break had occurred in the adjacent apartment complex approximately two months prior but had not yet been fixed.
4. Oil staining was observed on the ground surface adjacent to the waste oil container (see Appendix F, Photographs 56 and 57). This issue was identified and documented in Moca's August 1, 2012 facility inspection report. Municipality staff explained that they believed this was residual oil from previous waste oil handling activities by facility staff. They explained additional training had been provided to staff to increase pollution prevention and good housekeeping awareness and to avoid future spills.
5. There was an unstabilized channel with evidence of erosion directly to the south of the covered vehicle washing area (see Appendix F, Photographs 58, 59, and 60). The channel leads to the intermittent stream channel along the eastern edge of the facility. This issue was identified and documented in Moca's August 1, 2012 facility inspection report but had not been corrected prior to the audit.
6. Gaps and cracks were observed in multiple locations of the secondary containment structure for a diesel storage tank in the northern portion of the facility (see Appendix F, Photographs 61, 62, and 63). Furthermore, there was an open drain pipe in the secondary containment structure for the main diesel storage tank (see Appendix F, Photographs 64, 65, and 66). This issue was identified and documented in Moca's August 1, 2012 facility inspection report but had not been corrected prior to the audit.
7. A front end loader next to the diesel storage area with an active hydraulic fluid leak was observed during the site visit (see Appendix F, Photographs 67, 68, and 69). Facility staff applied absorbent to the ground surface and placed a drip pan beneath the leak while the EPA Audit Team was still onsite at the facility.
8. Municipality staff explained that about one month prior to the facility site visit they installed metal "I" beams along the eastern side of the facility upgradient of the stream in the vehicle storage area to help prevent potential pollutants from entering the intermittent stream (see Appendix F, Photograph 70).

9. The Municipality purchased a new parts washer for the facility in response to the inspection conducted by Moca's consultant on August 1, 2012 (see Appendix F, Photograph 71).

***Moca Recycling Facility – Located on Calle Ernos Caban Sosa near Intersection of Calle 22 de Julio; Cuesta Vieja Ward; Moca, Puerto Rico***

According to Municipality staff and its consultant, the recycling facility is used as a public dropoff for recyclable materials and a central collection and sorting area for materials. The facility is located adjacent to the Moca Public Works Yard. Moca's Planning and Development Engineer and contractor indicated that the facility is operated and maintained by the Municipality's Sanitation Department; however, the Moca Public Works Yard FPPP states that the recycling facility is operated by Department of Solid Waste.

The recycling facility is staffed by a guardian during regular business hours; however, the facility is open to the public 24 hours per day seven days a week. A channelized intermittent stream, which is an open channel, flows under the facility from north to south. The northern portion of the facility drains via sheet flow to the open channel while the remainder of the facility appears to drain to the onsite storm drain or to storm drains on the street.

Moca and its consultant conducted an initial inspection for pollution prevention and good housekeeping at the recycling facility as part of the inspection of the adjacent public works facility on August 1, 2012. As previously mentioned, the inspection report from that activity is included as Appendix E, Exhibit 13. The inspection report identifies numerous site deficiencies and is referenced, as applicable, in the site observations below.

The EPA Audit Team observed the following with regard to pollution prevention, good housekeeping and drainage at the Moca Recycling Facility:

1. The recycling area is located on an impervious surface and has one storm drain inlet (see Appendix C, Photographs 3 and 4). The storm drain inlet is located in a vehicle parking area and was not identified in the stormwater assessment conducted by Moca and its consultant on August 1, 2012 or on the Municipality's storm drain map. The storm drain appears to discharge directly to the intermittent stream that flows under the facility.
2. The FPPP prepared for the Moca Public Works facility contains information regarding the Moca Recycling Facility; however, the FPPP does not cover pollution prevention BMPs for several activities conducted at the recycling facility.
3. Annual inspections were not being conducted at the facility. Municipality staff were not clear on which municipality department would be responsible for conducting the annual inspections.

4. The recycling facility is not secured (e.g., gated and locked) during unstaffed hours to prevent improper disposal of materials, improper dumping at the facility, and improper placement of materials by the public.
5. No spill kits were located at the facility; however, absorbent materials were available at the adjacent public works facility.
6. No signs or instructions were posted at the recycling facility to indicate what materials are accepted or prohibited at the facility and where those materials should be placed.
7. At the time of the site visit, the biodiesel recycling area at the facility was being turned over to a new operator, the University of Puerto Rico – Maya West Campus. The EPA Audit Team recommended that Moca ensure its authority to adhere to the Municipality’s pollution prevention requirements, to conduct inspections of the activities occurring in the leased area, and to require corrective action if needed to prevent contamination of stormwater runoff at the facility through its operating contract with the University of Puerto Rico – Maya West Campus. A review of contractual documents was not conducted.
8. A wash area was observed adjacent to the recycling sorting area and adjacent to the intermittent stream (see Appendix C, Photographs 72 and 73). No signs or instructions were posted near the area to indicate operating procedures for the wash area.
9. A covered, used oil tank for public drop off of used motor oil was observed inside the entrance to the facility. The secondary containment area is equipped with a drain cleanout cap that is easily removed to allow for the draining of stormwater from the secondary containment area (see Appendix C, Photographs 74 through 76). Evidence of a recent release from the secondary containment area was evident (see Appendix C, Photographs 77). The recycling facility guardian stated that he had recently released stormwater from the containment structure. He further stated that he had not received instruction on the proper technique for releasing the water from the containment area. Moca Sanitation Department staff explained that the guardian had not been designated the responsibility for draining stormwater from the secondary containment structure as that was a public works designated activity. No documentation was provided regarding the actual designation of that duty.
10. Trash and debris were observed on the ground surface in multiple locations throughout the facility (see Appendix C, Photographs 78 and 79).
11. A large waste pile was observed in an area near the recycling sorting area and adjacent to the intermittent stream. A puddle of hydraulic fluid was noted at the base of the large waste pile. Public works staff indicated that the hydraulic line on a “digger” (i.e., front loader or similar equipment) had burst the day prior to the site visit and had not been cleaned up (see Appendix C, Photographs 80 through 83). Moca Public Works staff initiated the removal of the fluid and contaminated soil upon discovery of the spill by the EPA Audit Team.
12. Several unlabeled drums and totes were located in the fenced area leased to the University of Puerto Rico – Maya West Campus for the recycling of food grade

oil (see Appendix C, Photographs 84 and 85). Newly placed dirt and staining were noted throughout the fenced area.

13. A sheen resulting from dust suppression activities and/or vehicle and equipment washing was observed on standing water at the facility (see Appendix C, Photograph 86).

### **2.3.2. Moca had conducted stormwater awareness and pollution prevention training for municipal employees.**

Part 4.2.6.1 of the Permit requires Moca to develop and implement “an operation and maintenance program that includes a training component. . . . the program must include employee training to prevent and reduce storm water pollution from activities such as park and open space maintenance, fleet and building maintenance, new construction and land disturbances, and storm water system maintenance.”

Pursuant to these requirements, page 44 of the Moca 2012 SWMP states that Moca will conduct annual training for municipal field and management staff on issues such as general stormwater awareness, illicit discharges, and municipal maintenance activity SOPs. It further specifies that municipal facility employees will be trained on pollution prevention/good housekeeping practices in their respective areas of work for issues such as spill prevention and response, solid waste management, recycling, and good housekeeping BMPs for vehicle maintenance and washing.

Moca’s Stormwater Consultant explained she had provided training to the majority of employees in the Public Works Department and Sanitation Department during a training event held in October 2012. The training included information about illicit discharges, pollution prevention, and BMPs for good housekeeping. Moca maintains copies of training sign-in sheets and presentation materials as documentation of the training activity.

### **2.3.3. Moca had assessed its municipal facilities to determine the potential for stormwater pollution and to identify facilities for annual inspection.**

Part 4.2.6.2 of the Permit requires Moca to document its decision process for the development of a pollution prevention/good housekeeping program for municipal operations. The Permit further specifies that the program must include a list of municipal operations impacted by the Municipality’s operation and maintenance program and identify long-term inspection procedures to reduce pollutants to the MS4.

Pages 42 and 43 of the Moca 2012 SWMP explain that the Municipality has identified the municipal facilities and activities with the highest potential to contribute pollutants to stormwater and that an onsite inspection will be conducted at each facility. The SWMP describes that a FPPP will be developed for “each of the highest priority facilities” and that Moca will inspect each high-priority facility at least annually. The Moca 2012 SWMP identifies that initial facility inspections would be conducted by August 2012.

Moca's Stormwater Consultant explained that the Municipality used the following process to identify facilities which should be included in the pollution prevention /good housekeeping program: (1) created an overall list of municipal facilities, (2) held discussions with department directors to discuss facilities and activities that take place at each facility, (3) narrowed the list of facilities down to eight facilities with the highest potential to contribute pollutants to stormwater, primarily within the urbanized area, and (4) Moca and its consultant conducted initial site visits at facilities on July 31, 2012 and August 1, 2012 to assess site conditions and documented observations with inspection reports.

Based on these efforts, Moca and its consultant determined that one facility, the Public Works Facility, should have a FPPP, but each of the eight facilities inspected by Moca's consultant would be inspected annually.

**2.3.4. Moca had not performed annual inspections at high-priority municipal facilities during 2013 as specified in its SWMP.**

Page 45 of the Moca 2012 SWMP identifies that Moca will “conduct *annual* inspections at high priority municipal facilities [emphasis added]” by July 2013. The EPA Audit Team formally requested “[r]ecords of municipal facility inspections conducted for storm water purposes (most recent Reporting Year),” and in response, Moca provided copies of the inspection records for the inspections conducted July 31, 2012 and August 1, 2012. As noted in the finding above, Moca and its consultant conducted initial inspections of municipal facilities on July 31, 2012 and August 1, 2012; however, Moca had not performed any additional annual inspections of municipal facilities during 2013.

Moca's Stormwater Consultant explained that the department director or supervisor responsible for each of those eight municipal facilities would be trained this year to conduct the facility inspections. If there is not a department director or supervisor directly responsible for the facility, staff from the Moca Planning Department would conduct the site inspection.

At the time of the audit, Municipality staff responsible for conducting the inspections at each facility had not been identified and they had not been provided training on how to conduct or document the facility inspections, and the facility inspections for 2013 had not been conducted.